

GEOS-Chem default emission configuration				
Version 12.1.0, released 26 Nov 2018				
NO				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	BRAVO	Mexico	1999	annual
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Ship^1	CEDS	Global	1950-2014	monthly
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Lightning	Murray et al	Global	online	online
Soil	Vinken et al	Global	online	online
^1 via PARANOx				
NO2				
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	DICE	Africa	2013	annual
Ship^1	CEDS	Global	1950-2014	monthly
Ship^1	EMEP	Europe	1990-2012	annual
^1 via PARANOx				
HNO3 / O3				
Ship^1	CEDS	Global	1950-2014	monthly
Ship^1	EMEP	Europe	1990-2012	annual
^1 via PARANOx				
CO				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	BRAVO	Mexico	1999	annual
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly

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Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Ship	CEDS	Global	1950-2014	monthly
Ship	EMEP	Europe	1990-2012	annual
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Biogenic	MEGAN	Global	online	online
SO2				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	BRAVO	Mexico	1999	annual
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Ship	CEDS	Global	1950-2014	monthly
Ship	EMEP	Europe	1990-2012	annual
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Volcano	?	Global	1979-2009	daily
SO4				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	BRAVO	Mexico	1999	annual
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Aircraft	AEIC	Global	2005	monthly

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Ship	CEDS	Global	1950-2014	monthly
NH3				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Natural	GEIA	Global	1990	monthly
Trash	Wiedinmyer et al.	Global	2008	annual
Seabirds	?	Global	1990	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Ship	CEDS	Global	1950-2014	monthly
BCPI/OCPI				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Biomass burning	GFED4	Global	1997-2013	monthly
Aircraft	AEIC	Global	2005	monthly
Ship	CEDS	Global	1950-2014	monthly
BCPO/OCPO				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Biomass burning	GFED4	Global	1997-2013	monthly
Ship	CEDS	Global	1950-2014	monthly
EOH				

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Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Decaying plants	?	Global	climatology	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Biogenic	MEGAN	Global	online	online
Ship	CEDS	Global	1950-2014	monthly
C2H6				
Anthropogenic	Tzompa-Sosa et al.	Global	2010	monthly
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Ship	CEDS	Global	1950-2014	monthly
C3H8				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Ship	CEDS	Global	1950-2014	monthly
C2H4				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Biomass burning	GFED4	Global	1997-2013	monthly
Biogenic	MEGAN	Global	online	online
Ship	CEDS	Global	1950-2014	monthly
C2H2				
Anthropogenic	CEDS	Global	1950-2014	monthly

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Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Aircraft	AEIC	Global	2005	monthly
Ship	CEDS	Global	1950-2014	monthly
PRPE				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Biogenic	MEGAN	Global	online	online
Ship	CEDS	Global	1950-2014	monthly
BENZ/TOLU/XYLE				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Biomass burning	GFED4	Global	1997-2013	monthly
CH2O				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Ship	CEDS	Global	1950-2014	monthly
ALD2				

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Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Aircraft	AEIC	Global	2005	monthly
Decaying plants	?	Global	climatology	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Biogenic	MEGAN	Global	online	online
Ocean	Johnson et al	Global	online	online
Ship	CEDS	Global	1950-2014	monthly
MEK				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Ship	CEDS	Global	1950-2014	monthly
HCOOH				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Ship	CEDS	Global	1950-2014	monthly
ALK4				
Anthropogenic	CEDS	Global	1950-2014	monthly
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly

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Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Aircraft	AEIC	Global	2005	monthly
Biomass burning	GFED4	Global	1997-2013	monthly
Ship	CEDS	Global	1950-2014	monthly
ACET				
Anthropogenic	RETRO	Global	2000	monthly
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Aircraft	AEIC	Global	2005	monthly
Trash	Wiedinmyer et al.	Global	2008	annual
Biomass burning	GFED4	Global	1997-2013	monthly
Biogenic	MEGAN	Global	online	online
Ocean	Johnson et al	Global	online	online
SOAP				
Anthropogenic	Yevich and Logan	Global	1985	annual
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	BRAVO	Mexico	1999	annual
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Ship	CEDS	Global	1950-2014	monthly
Ship	EMEP	Europe	1990-2012	annual
Aircraft	AEIC	Global	2005	monthly
Trash	Wiedinmyer et al.	Global	2008	annual
Biomass burning	GFED4	Global	1997-2013	monthly
Biogenic	MEGAN	Global	online	online
SOAS / MTP0 / LIMO / SESQ				
Biogenic	MEGAN	Global	online	online

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MTPA				
Biomass burning	GFED4	Global	1997-2013	monthly
Biogenic	MEGAN	Global	online	online
POG1 / POG2				
Anthropogenic	Bond	Global	2000	monthly
Anthropogenic	APEI	Canada	1989-2014	annual
Biomass burning	GFED4	Global	1997-2013	monthly
NAP				
Anthropogenic	Yevich and Logan	Global	1985	annual
Biomass burning	GFED4	Global	1997-2013	monthly
HAC / GLYC				
Anthropogenic	Yevich and Logan	Global	1985	annual
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
MGLY / GLYX				
Anthropogenic	Yevich and Logan	Global	1985	annual
pFe				
Anthropogenic	EMEP	Europe	1990-2012	annual
Anthropogenic	BRAVO	Mexico	1999	annual
Anthropogenic	APEI	Canada	1989-2014	annual
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	MIX	Asia	2008-2010	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual
Ship	CEDS	Global	1950-2014	monthly
MOH				
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	DICE	Africa	2013	annual
Trash	Wiedinmyer et al.	Global	2008	annual

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HNO₂				
Anthropogenic	NEI2011	USA	2006-2013	monthly
RCHO / MACR				
Anthropogenic	NEI2011	USA	2006-2013	monthly
Anthropogenic	DICE	Africa	2013	annual
Aircraft	AEIC	Global	2005	monthly
DMS				
Ocean	Johnson et al	Global	online	online
DST1 / DST2 / DST3 / DST4				
Dust	DEAD	Global	online	online
Anthro PM _{2.5} ^{^1}	AFCID (S. Philip et al)	Global	2015	monthly
^{^1} added to DST1 species via the DEAD dust extension				
SALA / SALC / Br₂ / BrSALA / BrSALC				
Sea salt	Jaegle et al, Sherwen et al	Global	online	online
HOI / I₂				
Oceanic	Carpenter et al	Global	online	online
CHBr₃ / CH₂Br₂				
Oceanic	Qing Liang	Global	2000	annual
CH₃I / CH₂I₂ / CH₂ICI / CH₂I_{Br}				
Oceanic	Carlos Ordonez	Global	2000	monthly